IN THE CLAIMS

For the convenience of the Examiner, all pending claims of the present Application are shown below.

1. (Currently Amended) A ~~router~~ communication system comprising:

~~a plurality of~~ one or more line cards each operable to receive at least one packet comprising an identifier associated with at least one of a plurality of ~~a destination element~~ destination elements ~~external to the router~~, each line card comprising control circuitry operable to generate a control signal ~~comprising a look-up table operable to facilitate routing the received packet toward the destination element based at least in part on the identifier~~;

~~a plurality of~~ one or more optical transmitters each associated with one of the one or more line cards and operable to generate at a specified wavelength an optical ~~router~~ signal comprising at least a portion of the at least one packet received by the line card associated with that optical transmitter and at least a portion of the control signal from the control circuitry of the line card associated with that optical transmitter; and

a receiver associated with one of the one or more line cards and operable to receive an upstream optical signal from the plurality of destination elements;

a star ~~switching~~ communicating fabric operable to receive ~~a plurality of~~ the optical ~~router~~ signals from the ~~plurality of~~ one or more optical transmitters and to communicate to ~~each of a~~ each of the plurality of ~~tunable filters~~ destination elements a substantially similar set of at least some of the ~~plurality of~~ optical ~~router~~ signals;

wherein each of the plurality of destination elements comprise a filter coupled to a destination receiver and a destination transmitter, the destination receiver operable to receive at least a fraction of the optical signals, the destination elements operable to, based at least in part on the control signal, perform an operation to generate the upstream optical signal that is transmitted by the destination transmitter, the destination elements coupled to the star communicating fabric, which communicates at least a fraction of the upstream optical signal to the receiver associated with the one of the line cards. ~~tunable filters is operable to selectively tune to a wavelength of one of the plurality of optical router signals to facilitate communication of the packet associated with that optical router signal toward the destination element.~~

2. (Currently Amended) The ~~router~~ communication system of Claim 1, wherein at least one of the ~~plurality of~~ one or more optical transmitters comprises a fixed wavelength optical transmitter.

3. (Currently Amended) The ~~router~~ communication system of Claim 2, wherein the use of fixed wavelength optical transmitters comprises a primary mechanism for reducing collisions within the ~~switching~~ communicating fabric.

4. (Currently Amended) The ~~router~~ communication system of Claim 1, wherein the filter is a tunable filter. ~~tunable filter comprises a Fabry Perot based interferometric device.~~

5.- 14. (Cancelled)

15. (Currently Amended) The ~~router~~ communication system of Claim 1, wherein the packet comprises an Internet Protocol (IP) packet or a Transmission Control Protocol (TCP) packet.

16. (Currently Amended) The ~~router~~ communication system of Claim 1, wherein the packet comprises a Multi-Protocol Label Switching (MPLS) or a Generalized Multi-Protocol Label Switching (GMPLS) packet.

17. (Currently Amended) The ~~router~~ communication system of Claim 1, wherein the identifier comprises an address or a tag identifying an element external to the ~~router~~ communication system to which information in the packet is destined.

18. - 22.(Cancelled)

23. (Currently Amended) The ~~router~~ communication system of ~~Claim 1~~ Claim 4, wherein the ~~router~~ communication system is operable to facilitate multicast or broadcast operation by tuning multiple of the ~~plurality of~~ filters to the same selected wavelength.

24. (Currently Amended) The ~~router~~ communication system of Claim 1, further comprising an optical-to-electrical converter coupled to the ~~tunable~~ filter and operable to facilitate electronic processing of the optical signal received from the ~~tunable~~ filter.

25. (Currently Amended) The ~~router~~ communication system of Claim 1, wherein the star ~~switching~~ communicating fabric comprises a signal divider operable to receive a multiple wavelength signal and to communicate the multiple wavelength signal to a plurality of output paths from the star ~~switching~~ communicating fabric.

26. (Currently Amended) The ~~router~~ communication system of Claim 25, wherein the signal divider comprises a cascade of 1xn optical couplers.

27. (Currently Amended) The ~~router~~ communication system of Claim 25, wherein the signal divider comprises a power divider.

28. (Currently Amended) The ~~router~~ communication system of Claim 25, wherein the star ~~switching~~ communicating fabric comprises a signal combiner operable to combine a plurality of wavelength signals into the multiple wavelength signal and to communicate the multiple wavelength signal to the signal divider.

29. (Currently Amended) The ~~router~~ communication system of Claim 25, wherein the signal divider is coupled to an optical amplifier operable to amplify the multiple wavelength signal to at least partially compensate for a loss associated with the signal divider.

30. (Currently Amended) The ~~router~~ communication system of Claim 1, wherein at least some of the ~~plurality of~~ one or more optical transmitters each comprise:

a modulator operable to receive from common bay equipment an unmodulated optical signal having a center wavelength and to modulate the received signal;

wherein the common bay equipment is operable to generate using a single optical source a plurality of unmodulated optical signals each having a center wavelength.

31. (Currently Amended) The ~~router~~ communication system of Claim 30, wherein the common bay equipment comprises:

a modelocked pulse source operable to generate a plurality of optical pulses;

a continuum generator operable to broaden the spectrum of the plurality of optical pulses into an approximate spectral continuum of optical pulses; and

a signal splitter operable to generate from the approximate continuum the plurality of unmodulated optical signals each comprising a center wavelength.

32. (Currently Amended) A line card for use in a ~~router~~ communication system and operable to receive a packet comprising an identifier associated with a destination element ~~external to the router~~, the line card comprising:

a ~~look-up table~~ control circuitry operable to facilitate generation of a control signal based at least in part on the identifier;

an optical transmitter operable to generate an optical ~~router~~ signal comprising at least a portion of the packet and at least a portion of the control signal at a particular wavelength, the optical transmitter further operable to communicate the optical ~~router~~ signal to a star ~~switching~~ communicating fabric;

an optical receiver operable to receive an upstream optical signal; and

wherein the destination element comprises a filter coupled to a destination receiver and a destination transmitter, the ~~a tunable~~ filter operable to receive at least a portion of ~~a plurality of~~ the optical ~~router~~ signals from the star ~~switching~~ communicating fabric; the destination receiver operable to receive at least a fraction of the optical signals, the destination elements operable to, based at least in part on the control signal, perform an operation to generate the upstream optical signal that is transmitted by the destination transmitter, the destination elements coupled to the star communicating fabric, which communicates at least a fraction of the upstream optical signal to the receiver associated with the one of the line cards. ~~and to accept a selected optical router signal by tuning, in response to a control signal generated by another line card, to a wavelength associated with the selected optical router signal.~~

33. (Original) The line card of Claim 32, wherein the optical transmitter comprises a fixed wavelength optical transmitter.

34. (Original) The line card of Claim 33, wherein the optical transmitter comprises an integrated modulator.

35. - 36. (Cancelled)

37. (Original) The line card of Claim 32, wherein the optical transmitter comprises:

a modulator operable to receive from common bay equipment an unmodulated optical signal having a center wavelength and to modulate the received signal;

wherein the common bay equipment is operable to generate using a single optical source a plurality of unmodulated optical signals each having a center wavelength.

38. (Currently Amended) A ~~router~~ communication system comprising:

a first plurality of line cards residing in a first ~~rack~~ location;

a second plurality of line cards residing in ~~a second rack~~ one or more other locations physically separate from the first ~~rack~~ location, wherein each of the line cards of the first and second pluralities of line cards comprises a filter coupled to a receiver and an optical transmitter operable to generate at a specified wavelength an optical ~~router~~ signal;

a star ~~switching~~ communicating fabric operable to receive a plurality of optical ~~router~~ signals from the plurality of optical transmitters and to communicate substantially similar sets of optical ~~router~~ signals to each of a plurality of ~~tunable~~ filters~~, each tunable filter associated with one of the line cards and operable to selectively tune to a wavelength of one of the plurality of optical router signals received~~;

wherein the star ~~switching~~ communicating fabric operates ~~as a switching fabric and~~ as an interconnect between the ~~racks~~ different locations of line cards and wherein the ~~router~~ communication system is operable to communicate an optical ~~routing~~ signal from an optical transmitter residing in the first ~~rack~~ location to a ~~tunable~~ filter residing in the ~~second rack~~ one or more other locations without converting the optical ~~routing~~ signal to an electronic form between the optical transmitter and the ~~tunable~~ filter; and

wherein the first plurality of line cards further comprise a control circuitry operable to generate a control signal, and wherein the optical transmitters associated with the first plurality of line cards communicate the control signal as at least a part of the optical signal to the second plurality of line cards, and wherein the second plurality of line cards perform a function based at least in part on the control signal received.

39. (Currently Amended) The ~~router~~ communication system of Claim 38, wherein at least one of the optical transmitters residing on the first or second plurality of line cards comprises a fixed wavelength optical transmitter.

40. (Currently Amended) The ~~router~~ communication system of Claim 38, wherein at least one of the plurality of ~~tunable~~ filters is a tunable optical filter. ~~resides externally to its associated line card.~~

41. (Currently Amended) The ~~router~~ communication system of Claim 38, wherein each of the plurality of ~~tunable~~ filters is a tunable optical filter. ~~resides on its associated line card.~~

42. (Currently Amended) The ~~router~~ communication system of Claim 38, wherein at least one of the optical transmitters residing on the first or second plurality of line cards comprises:

a modulator operable to receive from common bay equipment an unmodulated optical signal having a center wavelength and to modulate the received signal;

wherein the common bay equipment is operable to generate using a single optical source a plurality of unmodulated optical signals each having a center wavelength.

43. (Currently Amended) A ~~router~~ communication network comprising:

~~a plurality of~~ one or more line cards each operable to receive at least one packet comprising an identifier associated ~~with a~~ with at least one of a plurality of destination ~~element external to the router~~ elements;

one or more control circuitry each associated with one of the line cards and operable to generate a control signal;

~~a plurality of~~ one or more optical transmitters each associated with one of the line cards and operable to generate at a specified wavelength an optical ~~router~~ signal comprising at least a portion of the packet received by the associated the line card and also comprising at least a portion of the control signal;

one or more optical receivers each associated with one of the line cards and operable to receive an upstream optical signal from the one or more destination elements;

a star ~~switching~~ communicating fabric operable to receive ~~a plurality of~~ one or more optical ~~router~~ signals from at least some of the ~~plurality of~~ one or more optical transmitters and to communicate substantially similar sets of optical ~~router~~ signals to at least some of the plurality of destination elements,

wherein each of the plurality of destination elements comprises a filter coupled to a destination receiver and a destination transmitter, the destination receiver operable to receive at least a fraction of the optical signals, the destination elements operable to, based at least in part on the control signal, perform an operation to generate the upstream optical signal that is transmitted by the destination transmitter, the destination elements coupled to the star communicating fabric, which communicates at least a fraction of the upstream optical signal to the receiver associated with the one of the line cards.

~~each of a plurality of tunable filters integral to the switching fabric, wherein each filter is associated with a separate output optical link and each filter is operable to selectively tune to a wavelength of one of the plurality of optical router signals to facilitate communication of the packet associated with that optical router signal from that filter toward a destination element associated with that packet.~~

44. (Currently Amended) The ~~router~~ communication network of Claim 43, wherein at least one of the ~~plurality of~~ one or more optical transmitters comprises a fixed wavelength optical transmitter.

45. (Currently Amended) The ~~router~~ communication network of Claim 43, wherein at least one of the ~~plurality of~~ one or more optical transmitters resides externally to its associated line card.

46. (Currently Amended) The ~~router~~ communication network of Claim 43, wherein at least one of the ~~plurality of~~ one or more optical transmitters comprises:

a modulator operable to receive from common bay equipment an unmodulated optical signal having a center wavelength and to modulate the received signal;

wherein the common bay equipment is operable to generate using a single optical source a plurality of unmodulated optical signals each having a center wavelength.

47. (Currently Amended) The ~~router~~ communication network of Claim 43, wherein the packet comprises an Internet Protocol (IP) packet or a Transmission Control Protocol (TCP) packet.

48. (Currently Amended) The ~~router~~ communication network of Claim 43, wherein the packet comprises a Multi-Protocol Label Switching (MPLS) or a Generalized Multi-Protocol Label Switching (GMPLS) packet.

49. (Currently Amended) A ~~switching~~ communicating core for use in a ~~router~~ communication system, the ~~switching~~ communicating core comprising:

a star ~~switching~~ communicating fabric operable to receive a plurality of input optical ~~router~~ signals ~~each comprising a different wavelength~~, at least some optical ~~router~~ signals carrying a packet associated with a destination element and a control signal from a control circuitry ~~external to the router~~, wherein the star ~~coupler~~ communicating fabric is operable to generate a plurality of output optical ~~router~~ signals each comprising a substantially similar set of at least some of the plurality of input optical ~~router~~ signals; and

a plurality of destination elements ~~tunable filters~~ coupled to the star ~~switching~~ communicating fabric,

wherein each of the plurality of destination elements comprises a filter coupled to a destination receiver and a destination transmitter, the destination receiver operable to receive at least a fraction of the optical signals, the destination elements operable to, based at least in part on the control signal, perform an operation to generate the upstream optical signal that is transmitted by the destination transmitter, the destination elements coupled to the star communicating fabric, which communicates at least a fraction of the upstream optical signal to the receiver associated with the one of the line cards.

~~each tunable filter associated with a line card and operable to receive one of the output optical router signals and to select a portion of the output optical router signal by tuning to a wavelength of the selected portion of the output optical router signal, wherein each tunable filter is coupled to its associated line card through a multi-mode fiber.~~

50. (Currently Amended) The ~~switching~~ communicating core of Claim 49, wherein at least one of the plurality of input optical ~~router~~ signals is generated by a fixed wavelength optical transmitter ~~within the router~~.

51. (Currently Amended) The ~~switching~~ communicating core of Claim 49, wherein the packet comprises an Internet Protocol (IP) packet or a Transmission Control Protocol (TCP) packet.

52. (Currently Amended) The ~~switching~~ communicating core of Claim 49, wherein the packet comprises a Multi-Protocol Label Switching (MPLS) or a Generalized Multi-Protocol Label Switching (GMPLS) packet.

53. (Currently Amended) The ~~switching~~ communicating core of Claim 49, wherein the star ~~switching~~ communicating fabric comprises a signal divider operable to receive a multiple wavelength signal and to communicate the multiple wavelength signal to a plurality of output paths from the star ~~switching~~ communicating fabric.

54. (Currently Amended) The ~~switching~~ communicating core of Claim 53, wherein the signal divider comprises a cascade of 1xn optical couplers.

55. (Currently Amended) The ~~switching~~ communicating core of Claim 53, wherein the signal divider comprises a power divider.

56. (Currently Amended) The ~~switching~~ communicating core of Claim 53, wherein the star ~~switching~~ communicating fabric comprises a signal combiner operable to combine a plurality of wavelength signals into the ~~multiple wavelength~~ input optical signal and to communicate the ~~multiple wavelength~~ input optical signal to the signal divider.

57. (Currently Amended) The ~~switching~~ communicating core of Claim 53, wherein the signal divider is coupled to an optical amplifier operable to amplify the ~~multiple wavelength~~ input optical signal to at least partially compensate for a loss associated with the signal divider.

58. (Currently Amended) A ~~switching~~ communicating core for use in a ~~router~~ communication system, the ~~switching~~ communicating core comprising:

a signal combiner operable to combine a plurality of wavelength signals into a multiple wavelength signal;

a control circuitry operable to generate a control signal that is combined with at least a portion of the multiple wavelength signal;

an optical amplifier operable to receive and amplify at least a fraction of the multiple wavelength signal;

a signal divider operable to receive a multiple wavelength signal and to communicate the multiple wavelength signal toward a plurality filters, each filter associated with an output link from the ~~router~~ communication system and operable to ~~pass~~ separate ~~a particular wavelength signal of~~ the multiple wavelength signal into a plurality of output wavelength signals;

at least some of the output wavelength signals coupled to one or more receivers, wherein the receivers perform a function at the output link based at least in part on the control signal from the control circuitry.

~~while rejecting at least some of the other wavelengths of the multiple wavelength signal.~~

59. (Currently Amended) The ~~switching~~ communicating core of Claim 58, wherein the signal combiner comprises a wavelength division multiplexer.

60. (Currently Amended) The ~~switching~~ communicating core of Claim 58, wherein the signal divider comprises a cascade of 1xn optical couplers.

61. (Currently Amended) The ~~switching~~ communicating core of Claim 58, wherein the signal divider comprises a power splitter.

62. (Currently Amended) The ~~switching~~ communicating core of Claim 58, wherein at least some of the filters comprise tunable filters operable to select a portion of the multiple wavelength signal for further transmission by tuning to a wavelength of the selected portion of the multiple wavelength signal.

63. (Currently Amended) The ~~switching~~ communicating core of Claim 58, wherein the plurality of wavelength signals received by the signal combiner comprise optical signals generated by tunable optical transmitters.

64. (Currently Amended) A ~~router~~ communication system, comprising:

~~a plurality of~~ one or more line cards each operable to receive at least one Internet Protocol (IP) or Transmission Control Protocol (TCP) or Multiple Protocol Label Switching (MPLS) or Generalized Multiple Protocol Label Switching (GMPLS) packet, each line card operable to perform ~~label switching~~ header or label processing to facilitate ~~routing~~ communicating the received packet ~~toward a~~ toward one or more destination ~~element~~ elements, and each line card further comprising a control circuitry capable of generating a control signal;

~~a plurality of~~ one or more optical transmitters each associated with one of the line cards and operable to generate at a particular wavelength an optical ~~router~~ signal comprising at least a portion of the packet received by the line card associated with that optical transmitter and further comprising the control signal from the control circuitry; and

a star ~~switching~~ communicating fabric operable to receive ~~a plurality of~~ one or more optical ~~router~~ signals from the ~~plurality of~~ one or more optical transmitters and to communicate a substantially similar set of optical ~~router~~ signals to each of one or more destination elements,

wherein each of the one or more destination elements comprises a filter coupled to a destination receiver and a destination transmitter, the destination receiver operable to receive at least a fraction of the optical signals, the destination elements operable to, based at least in part on the control signal, perform an operation to generate the upstream optical signal that is transmitted by the destination transmitter, the destination elements coupled to the star communicating fabric, which communicates at least a fraction of the upstream optical signal to the receiver associated with the one of the line cards.

~~a plurality of filters, each filter associated with a separate output link from the router and operable to pass a particular wavelength toward the associated output link from the router.~~

65. (Currently Amended) The ~~router~~ communication system of Claim 64, wherein each of the one or more optical transmitters comprises a tunable transmitter operable to selectively tune to a wavelength passed by a selected one of the ~~plurality of~~ filters coupled to a desired output link from the ~~router~~ communication system.

66. (Currently Amended) The ~~router~~ communication system of Claim 64, wherein at least one of the ~~plurality of~~ one or more optical transmitters comprises:

a modulator operable to receive from common bay equipment an unmodulated optical signal having a center wavelength and to modulate the received signal;

wherein the common bay equipment is operable to generate using a single optical source a plurality of unmodulated optical signals each having a center wavelength.

67. (Currently Amended) The ~~router~~ communication system of Claim 64, wherein ~~each~~ at least some of the ~~plurality of~~ filters comprises a tunable filter operable to selectively tune to a wavelength of a particular optical ~~router~~ signal destined for transmission from the associated output link.

68. (Currently Amended) The ~~router~~ communication system of Claim 67, wherein at least one of the optical transmitters comprises a fixed wavelength optical transmitter.

69. (Currently Amended) The ~~router~~ communication system of Claim 64, wherein at least one of the ~~plurality of~~ filters resides externally to all of the line cards.

70. (Currently Amended) The ~~router~~ communication system of Claim 64, wherein each of the ~~plurality of~~ filters resides on a respective one of the ~~plurality of~~ one or more line cards that is coupled to the optical output link associated with that filter.

71. (Currently Amended) In a ~~router~~ communication system comprising ~~a plurality of~~ one or more line cards coupled to a star ~~switching~~ communicating fabric, a method of ~~routing~~ communicating optical signals, comprising:

receiving at a first line card a first packet comprising an identifier ~~of a destination element external to the router~~;

using a control circuitry ~~applying the identifier to a look-up table~~ on the first line card to determine a control signal;

communicating the first packet and the control signal to a star ~~switching~~ communicating fabric in an optical format having a first wavelength;

communicating from the star ~~switching~~ communicating fabric to a plurality of ~~tunable filters~~ destination elements each associated with a separate output link from the ~~router~~ communication system, the first packet and the control signal ~~at least a second packet comprising an optical format having a second wavelength~~;

wherein each of the plurality of destination elements comprises a filter coupled to a destination receiver and a destination transmitter, the destination receiver operable to receive at least a fraction of the optical signals, the destination element operable to, based at least in part on the control signal, perform an operation to generate the upstream optical signal that is transmitted by the destination transmitter, the destination elements coupled to the star communicating fabric, which communicates at least a fraction of the upstream optical signal to the receiver associated with the one of the line cards.

~~communicating the control signal to a selected tunable filter associated with a communication path to the destination element, the control signal operable to cause the selected tunable filter to accept the first packet and to facilitate communicating the first packet toward the destination element~~.

72. (Cancelled)

73. (Currently Amended) The method of Claim 71, wherein communicating the first packet to a star ~~switching~~ communicating fabric in an optical format having a first wavelength comprises:

generating a first optical signal comprising the first packet using a fixed wavelength optical transmitter operable to generate optical signals at approximately the first wavelength.

74. (Currently Amended) The method of Claim 73, wherein the ~~look-up table~~ control circuitry and the fixed optical transmitter reside on the first line card.

75. (Currently Amended) The method of Claim 71, wherein communicating the first packet to a star ~~switching~~ communicating fabric in an optical format having a first wavelength comprises:

receiving an unmodulated optical signal having the first wavelength from common bay equipment operable to generate a plurality of unmodulated optical signals each having a center wavelength;

modulating information onto the unmodulated optical signal; and

communicating the modulated optical signal to the star coupler.

76. (Currently Amended) The method of Claim 71, wherein the first packet comprises an Internet Protocol (IP) packet or a Transmission Control Protocol (TCP) packet and wherein the identifier comprises an address identifying the particular destination element. ~~network element external to the router.~~

77. (Currently Amended) The method of Claim 71, wherein the first packet comprises a Multi-Protocol Label Switching (MPLS) packet or a Generalized Multi-Protocol Label Switching (GMPLS) packet and wherein the identifier comprises a tag identifying the particular destination element. ~~network element external to the router.~~

78. - 84. (Cancelled)

85. (Currently Amended) The method of Claim 71, wherein communicating the first packet to the star ~~switching~~ communicating fabric and communicating the first ~~and second packets~~ packet from the star ~~switching~~ communicating fabric to the ~~to a plurality of tunable~~ filters comprises:

communicating the first packet from the first line card to the selected ~~tunable~~ filter without converting the first packet from an optical to an electrical format between the first line card and the selected ~~tunable~~ filter.

86.- 88. (Cancelled)

89. (New) The communication system of Claim 1, wherein the upstream optical signal from the plurality of destination elements is at a different wavelength than the specified wavelength.

90. (New) The communication system of Claim 1, wherein at least some of the one or more optical transmitters is coupled to an optical amplifier.

91. (New) The communication system of Claim 90, wherein the optical amplifier is selected from the group consisting of a distributed Raman amplifier, a discrete Raman amplifier, a rare earth-doped amplifier, a semiconductor amplifier, and an erbium-doped fiber amplifier.

92. (New) The communication system of Claim 1, wherein the one or more optical transmitters are further coupled to a wavelength division multiplexer or demultiplexer (WDM).

93. (New) The communication system of Claim 1, wherein the star communicating fabric comprises a signal divider operable to receive an optical wavelength signal and to communicate the optical wavelength signal to a plurality of output paths from the star communicating fabric.

94. (New) The communication system of Claim 93, wherein the signal divider comprises a cascade of 1xn optical couplers.

95. (New) The communication system of Claim 93, wherein the signal divider is coupled to an optical amplifier operable to amplify the optical wavelength signal to at least partially compensate for a loss associated with the signal divider.

96. (New) The communication system of Claim 1, wherein the control circuitry comprises a scheduler.

97. (New) The communication system of Claim 1, wherein at least some of the plurality of destination elements are located at different physical locations.

98. (New) The line card of Claim 32, wherein the upstream optical signal is at a different wavelength than the optical signal.

99. (New) The line card of Claim 32, wherein the transmitter is further coupled to a wavelength division multiplexer or demultiplexer (WDM).

100. (New) The line card of Claim 32, wherein the star communicating fabric comprises a cascade of 1xn optical couplers.

101. (New) The communication system of Claim 38, wherein the star communicating fabric comprises a cascade of 1xn optical couplers.

102. (New) The communication network of Claim 43, wherein the upstream optical signal is at a different wavelength than the optical signal.

103. (New) The communication network of Claim 43, wherein the one or more optical transmitters are further coupled to a wavelength division multiplexer or demultiplexer (WDM).

104. (New) The communication network of Claim 43, wherein the star communicating fabric comprises a cascade of 1xn optical couplers.

105. (New) The communication network of Claim 43, wherein the plurality of destination elements are remotely located from the one or more line cards.

106. (New) The communicating core of Claim 49, wherein the upstream optical signal is at a different wavelength than the input optical signals.

107. (New) The communicating core of Claim 49, wherein the star communicating fabric comprises a cascade of 1xn optical couplers.

108. (New) The communicating core of Claim 49, wherein each of the plurality of destination elements are located in different location.

109. (New) The communicating core of Claim 58, wherein the signal divider is a cascade of 1xn couplers.

110. (New) The communication system of Claim 64, wherein the upstream optical signal is at a different wavelength than the optical signal.

111. (New) The communication system of Claim 64, wherein the one or more optical transmitters are further coupled to a wavelength division multiplexer or demultiplexer (WDM).

112. (New) The communication system of Claim 64, wherein the star communicating fabric comprises a cascade of 1xn optical couplers.

113. (New) The communication system of Claim 64, wherein the one or more line cards are located at a different location than the one or more destination elements.

114. (New) The method Claim 71, wherein the upstream optical signal is at a different wavelength than the first wavelength.

115. (New) The method of Claim 71, wherein the star communicating fabric comprises a cascade of 1xn optical couplers.

116. (New) The method of Claim 71, wherein the one or more line cards are located at a different location than the plurality of destination elements.